United States Environmental Protection Agency
Region 8 Air Program
Air Pollution Control Minor Source Permit to Construct
Technical Support Document for
Proposed Permit No. TMNSR-FP-000010-2015.001

CHS Inc.
Farmers Elevator
Fort Peck Indian Reservation
Roosevelt County, Montana

In accordance with the requirements of the Tribal Minor New Source Review (MNSR) Permit Program at 40 CFR Part 49, this federal permit to construct is being issued under authority of the Clean Air Act (CAA). The EPA has prepared this technical support document describing the conditions of this permit and is presenting information that is germane to this permit action.

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I. Introduction

On July 29, 2015, the EPA received an application from CHS Inc. (CHS) requesting a permit for a true minor new source of air pollutant emissions in accordance with the requirements of the MNSR Permit Program.

Through this permit action, the EPA is proposing to approve construction of a modification to an existing country[1] grain elevator on Indian country lands within the Fort Peck Indian Reservation in Roosevelt County, Montana. The proposed modification is estimated to be a true minor new source of criteria pollutants with respect to the MNSR Permit Program.

This proposed permit contains production limits, emission control requirements, and associated monitoring, recordkeeping, and reporting requirements, for the modification project and/or certain pollutant emission-generating units or activities approved for construction and installation.

II. Facility Description

The CHS Farmers Elevator is located on Indian country lands within the Fort Peck Indian Reservation in the SENE ¼ of Section 9, Township 27 North, Range 48 East, Roosevelt County, Montana, at latitude 48.10972N and longitude 105.51833W.

This enclosed grain handling and storage facility, with an existing permanent storage capacity of 996,000 bushels, currently receives, cleans and stores various grains from local farmers for storage until shipment to a variety of markets via rail car. Area grain is hauled to the facility from local farmers via hopper trucks (approximately 98%) and straight trucks (approximately 2%) and routed to the receiving area of the grain elevator, where grain is gravity fed into a receiving pit for placement into storage. Grain is transferred through the grain elevator from the receiving pit(s) to storage bins by means of various conveyors and elevator legs, typical of country grain elevators across the United States.

When ready for shipment, the shipping conveyors and elevator legs distribute grain to the bulk weighing system prior to load-out into railcars. A very small portion (less than 1%) of grain products is transported via hopper truck for transfer to other CHS Inc. operations. The grain received at the elevator is cleaned by moving over a grate at the same time it is being physically transferred from the receiving area and placed into the storage bins. A minor portion of grain is cleaned as a separate operation due to limited storage. The existing receiving pit, the elevator legs and the cleaning system are, and will continue to be, equipped with a total of three cyclone systems for the control of particulate matter (PM, PM_{10} and $PM_{2.5}$).

The facility does not currently combust either natural gas, propane or fuel oil for either grain drying or convenience heating purposes. There are no temporary grain storage areas (i.e. outside bunkers) onsite. Fumigation is not performed at the elevator.

CHS Farmers Elevator is proposing to expand the overall receiving, storing, cleaning and shipping capacities of the existing facility. This expansion would include: two additional truck receiving pits with baghouses for control of particulate matter; 14 additional silos and bins that would increase the

[1] A country grain elevator is defined as a facility that receives more than 50 percent of its grain from farmers in the immediate vicinity during the harvest season.

permanent storage capacity for the facility to approximately 1.92 million bushels; a new railcar receiving hopper (pit); a new grain moving and handling system; an additional cleaning system with a baghouse for control of particulate matter; additional grain load-out capacity for railcars, and associated conveyors and elevator legs with baghouses for control of particulate matter. With the expansion the maximum throughput capacity of the facility is estimated at around 15,000,000 or more bushels per year.

Table 1, Existing and Proposed Emissions Units and/or Activities and Maximum Operational Design, shows the emission-generating units and activities that are currently installed and operating at the existing facility, as well as those that are proposed to be approved for installation and operation at the existing facility. Table 2, Estimated Facility-Wide Emissions provides an accounting of uncontrolled and controlled emissions in tons per year (tpy) for the current and proposed configuration of the existing facility.

Table 1 – Existing and Proposed Approved Emissions Units and/or Activities and Maximum Operational Design

Description	**Maximum Operational Design**	**Maximum for PTE calculations (1.2xMax)**
Existing Emission Units/Activities (Maximum of last 5 years)		
Truck Receiving Area – Hopper truck	12,093,000 bushels of grain per year	14,511,606 bushels of grain per year
Truck Receiving Area – Straight truck	246,805 bushels of grain per year	296,166 bushels of grain per year
Grain Loadout Area - Truck	61,694 bushels of grain per year	74,033 bushels of grain per year
Grain Loadout Area – Railcar	12,278,111 bushels of grain per year	14,733,739 bushels of grain per year
Grain Handling	26,530,582 bushels of grain per year	31,834,713 bushels of grain per year
Grain Cleaning	12,339,805 bushels of grain per year	14,807,773 bushels of grain per year
Storage Bin venting	12,339,805 bushels of grain per year	14,807,773 bushels of grain per year
Truck Traffic	10,577 vehicle trips per year	12,692 vehicle trips per year
New Proposed Emission Units/Activities with expansion		
Truck Receiving Area – Hopper truck	14,700,000 bushels of grain per year	17,640,000 bushels of grain per year
Truck Receiving Area – Straight truck	300,000 bushels of grain per year	360,000 bushels of grain per year
Grain Loadout Area - Truck	75,000 bushels of grain per year	90,000 bushels of grain per year
Grain Loadout Area – Railcar	14,925,000 bushels of grain per year	17,910,000 bushels of grain per year
Grain Handling	32,250,000 bushels of grain per year	38,700,000 bushels of grain per year
Grain Cleaning	15,000,000 bushels of grain per year	18,000,000 bushels of grain per year
Storage Bin venting	15,000,000 bushels of grain per year	18,000,000 bushels of grain per year
Truck Traffic	12,857 vehicle trips per year	15,429 vehicle trips per year

Table 2 – Estimated Facility-Wide Emissions

Pollutant	Current Allowable Emissions (tpy)*	Post-Change Potential Emissions (tpy)*	Proposed Allowable Emissions (tpy)*	Proposed Change in Allowable Emissions (tpy)
PM	132.46	161.01	161.01	28.55
PM_{10}	41.22	50.1	50.1	8.88
$PM_{2.5}$	6.98	8.49	8.49	1.51
SO_2	NA	NA	NA	NA
NO_X	NA	NA	NA	NA
CO	NA	NA	NA	NA
VOC	NA	NA	NA	NA
Pb	NA	NA	NA	NA
Fluorides	NA	NA	NA	NA
H_2SO_4	NA	NA	NA	NA
H_2S	NA	NA	NA	NA
TRS	NA	NA	NA	NA
RSC	NA	NA	NA	NA
Greenhouse Gases				
CO_2e (Total)	NA	NA	NA	NA
Hazardous Air Pollutants (HAP)				
Formaldehyde	NA	NA	NA	NA
Benzene	NA	NA	NA	NA
Toluene	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA
Xylene	NA	NA	NA	NA
Total HAP's	**0**	**0**	**0**	**0**

PM - Particulate Matter
PM_{10} – Particulate Matter less than 10 microns in size
$PM_{2.5}$ – Particulate Matter less than 2.5 microns in size
SO_2 - Sulfur Dioxide
NO_X - Nitrogen Oxides
CO - Carbon Monoxide
VOC - Volatile Organic Compound
Pb - Lead and lead compounds
Fluorides - Gaseous and particulates
H_2SO_4 - Sulfuric Acid Mist
H_2S - Hydrogen Sulfide
TRS - Total Reduced Sulfur
RSC - Reduced Sulfur Compounds
CO_2e – Equivalent carbon dioxide (CO_2). A measure used to compare the emissions from various greenhouse gases based upon their global warming potential

* The current allowable emissions represent the current facility configuration and account for existing legally and practically enforceable restrictions. The post-change potential emissions include the potential uncontrolled emissions from the proposed modification project. The proposed allowable emissions represent the controlled emissions of the proposed modification project.

III. Proposed MNSR Permit Emission Limits and Controls

According to the requirements at 40 CFR 49.154(c), the EPA must determine the emission limitations required in a true minor source site-specific MNSR permit by conducting a case-by-case control technology review to determine the appropriate level of control, if any, to assure that the National Ambient Air Quality Standard (NAAQS) are achieved. In carrying out this case-by case control technology review, the EPA must consider the following factors: 1) local air quality conditions; 2) typical control technology or other emission reduction measures used by similar sources in surrounding areas; 3) anticipated economic growth; and 4) cost effective emission reduction alternatives. For this permit, the EPA considered regulations that apply to the equipment at grain elevator facilities. The Standards of Performance for Grain Handling Facilities at 40 CFR Part 60, Subpart A and DD contain requirements for what the EPA has determined is the best systems of emissions reductions (BSER) adequately demonstrated[2] for the relevant process equipment for certain new grain elevators and the associated cleaning and screening operations. We also reviewed other federal and state air pollution control permits for the sources to determine typical control requirements.

[2] BSER is determined in New Source Performance Standards by taking into account such factors as the cost, availability, level of use among existing sources, non-air quality health and environmental impact, energy requirements, amount of air pollution reduced, and technological innovation.

Based on our review of existing relevant regulations and existing federal and state permits for grain handling operations, especially similar grain elevator permits from Montana Department of Environmental Quality, we agree with CHS's proposal to install and operate the following control devices to complement the existing cyclone particulate control devices:

1. Two (2) new cartridge style bag houses to control particulate emissions from each new elevator leg;
2. Two (2) new bag houses to control particulate emissions from each new truck unloading pit; and
3. One (1) new bag house to control particulate emissions from the new cleaning area.

EPA guidance[3] suggests multiplying the maximum capacity of the facility by 1.2 to account for the possibility of record harvests. Therefore the emission and throughput limits are based a throughput of 18,000,000 bushels per year. The grain handling operation takes that limit and multiplies it by 2.15 to account for grain being moved around the facility multiple times before being loaded onto the train or truck.

We are proposing monitoring, recordkeeping, and reporting requirements to ensure compliance with the production limits, and emission control requirements, including:

1. Monthly fabric/cartridge filter inspections;
2. Records of the amounts of grain received and transferred (monthly and annual);
3. Records of grain production (daily, monthly, and annual);
4. Records of daily hours of operation for each controlled piece of equipment;
5. Notifications of beginning construction and operations;
6. Annual reports certifying compliance with the permit; and
7. Reports of permit deviations.

The proposed permit establishes emission control requirements that are consistent with what is required of country grain elevator operations across the country in attainment areas. As such, the proposed control technologies are considered widely available; and after considering anticipated economic growth in the area and more cost-effective alternatives, we determined that it was not necessary to make any additional changes to the proposal at this time.

IV. Air Quality Review

The Federal Minor New Source Review Regulations at 40 CFR 49.154(d) require that an Air Quality Impact Assessment (AQIA) modeling analysis be performed if there is reason to be concerned that new construction would cause or contribute to a NAAQS or Prevention of Significant Deterioration (PSD) increment violation. If an AQIA reveals that the proposed construction could cause or contribute to a NAAQS or PSD increment violation, such impacts must be addressed before a pre-construction permit can be issued.

The area surrounding the project area is currently considered to attain the NAAQS for all criteria pollutants. Data was collected and reviewed from the EPA's Air Quality Statistics (AQS) database for

3 Guidance on calculating PTE of Country Grain Elevators can be found at www.epa.gov/region07/air/title5/t5memos/grainfnl.pdf

air monitors in Roosevelt County for 2012-2014. These data confirmed that the air quality in Roosevelt County has not exceeded the NAAQS standards for criteria pollutants being emitted from this facility ($PM_{2.5}$ and PM_{10}) for the most recent available 3 years of data. The available data for pollutants is summarized in Table 3.

Table 3. 2012-2014 Air Quality Data for Roosevelt County

Site Name and AQS Number	NAAQS Pollutant & Standard Criteria	2012*	2013*	2014*	Current NAAQS Standard
Fort Peck 30-085-9000	$PM_{2.5}$ – 98th Percentile, 24-hr (µg/m^3)	13.6	16.8	16.8	35
Fort Peck 30-085-9000	$PM_{2.5}$ – Weighted Mean, annual (µg/m^3)	4.1	4.3	4.17	12
Fort Peck 30-085-9000	PM 10 - 98th Percentile, 24-hr (µg/m^3) Yearly max value	15.5	21.2	18.1	150 µg/m^3, not to be exceeded more than once per year

* The AQS database, located online at http://www.epa.gov/aqs, is updated by state, local, and tribal organizations who generate, review and submit the data. Compliance with the NAAQS is determined by comparison to a "design value" that is calculated based on a three-year average of the annual standard criteria values for each NAAQS pollutant. Regulatory design value data is available online at http://www3.epa.gov/airtrends/values.html.The values in this table represent data reported as accessed on March 10, 2016. Exceptional Events are excluded, which should not be used to determine background air quality or NAAQS compliance.

CHS Farmers Elevator - Macon Proposed Modification Characteristics and Estimated Emissions

The CHS Farmers Elevator is located at an elevation of 2,090 feet above mean sea level. The area immediately surrounding the site is predominately agricultural and rural in nature. The annual average precipitation for 2012-2014 was 13.13 inches, with the highest annual precipitation of 21.28 inches occurring in 2013. The average highest temperature during this timeframe was 92 degrees Fahrenheit, while the average lowest temperature was -17.2 degrees Fahrenheit. The highest temperatures were measured during the months of June, July, and August, while the lowest temperatures were measured in January and December.[4]

The CHS Farmers Elevator is an existing minor source for the purposes of the PSD Permit Program at 40 CFR Part 52. The proposed project is not a major modification, as defined under the PSD Permit Program, as the potential to emit all NSR-regulated pollutants for the project is less than 250 tpy and the proposed increase in allowable emissions for all NSR regulated pollutants for the project are less

[4] 2010-2014 data accessed from the National Centers for Environmental Information, National Oceanic and Atmospheric Administration, Climate Data Online website at http://www.ncdc.noaa.gov/cdo-web/, for the Ignacio 8E Station (Latitude: 37.086° N, Longitude: 107.533° W).

than the respective significant emission rates for major PSD sources at 40 CFR 52.21(b)(23)(i). The proposed project is estimated to result in an increase in allowable emissions of 28.55 tpy PM, 8.88 tpy PM_{10}, and 1.51 tpy $PM_{2.5}$ emissions. For PM, PM_{10}, and $PM_{2.5}$ the significant emission rates for existing major PSD sources is 25 tpy, 15 tpy, and 3 tpy respectively. Since the background concentration of PM_{10} and $PM_{2.5}$ in Roosevelt County is low in comparison to the NAAQS, a less than 9 tpy increase in PM_{10} emissions and a less than 2 tpy increase in $PM_{2.5}$ emissions is expected to have very little effect on localized NAAQS values, given that both are approximately half of the PSD significance thresholds for a major source. Therefore, the impacts to local air quality from the proposed project are not expected to be significant and should not have an adverse impact on attainment of the NAAQS or cause or contribute to PSD increment violation. We have determined that an AQIA modeling analysis is not required for this permit action.

V. Tribal Consultations and Communications

All minor source applications (synthetic minor, modification to an existing major source, new true minor or general permit) are submitted to both the Tribes and the EPA per the application instructions (see http://www.epa.gov/caa-permitting/tribal-nsr-permitting-region-8). The Tribes have 10 business days to respond to us with questions and comments on the application. In the event an AQIA is triggered, we email a copy of that document to the Tribes as soon as we receive it.

Additionally, we notify the Assiniboine and Sioux Indian Tribes of the public comment period for the draft permit and provide copies of the notice of public comment opportunity to post in various locations of their choosing on the Reservation. We also notify the Tribes of the issuance of the final permit.

VI. Environmental Justice

On February 11, 1994, the President issued Executive Order 12898, entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." The Executive Order calls on each federal agency to make environmental justice a part of its mission by "identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations."

The EPA defines "Environmental Justice" as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and polices. The EPA's goal with respect to Environmental Justice in permitting is to enable overburdened communities to have full and meaningful access to the permitting process and to develop permits that address environmental justice issues to the greatest extent practicable under existing environmental laws. *Overburdened* is used to describe the minority, low-income, tribal and indigenous populations or communities in the United States that potentially experience disproportionate environmental harms and risks as a result of greater vulnerability to environmental hazards.

This discussion describes our efforts to identify overburdened communities and assess potential effects in connection with issuing this permit in Roosevelt County on Indian country lands within the Fort Peck Indian Reservation.

A. Environmental Impacts to Potentially Overburdened Communities

This permit action authorizes the construction of new air emission sources at an existing facility with the potential to emit air pollutants at minor source levels under the MNSR Permit Program. The existing facility is located in a rural area primarily used for livestock grazing and other agricultural uses. The total net emissions increases for this project are below the major source PSD thresholds for all criteria pollutants. The ambient air measurements show existing air quality in the project area currently meets the NAAQS. The new emission sources would be controlled using baghouses with 96% - 99% particulate matter control efficiency. Therefore, the impacts to local air quality from the proposed project are not expected to be significant.

For purposes of Executive Order 12898 on environmental justice, the EPA has recognized that compliance with the NAAQS is "emblematic of achieving a level of public health protection that, based on the level of protection afforded by a primary NAAQS, demonstrates that minority or low-income populations will not experience disproportionately high and adverse human health or environmental effects due to the exposure to relevant criteria pollutants." (*In re Shell Gulf of Mexico, Inc. & Shell Offshore, Inc.*, 15 E.A.D., slip op. at 74 (EAB 2010)). This is because the NAAQS are health-based standards, designed to protect public health with an adequate margin of safety, including sensitive populations such as children, the elderly, and asthmatics.

Based on the findings described above, the EPA has concluded that issuance of the permit is not expected to have disproportionately high or adverse human health effects on overburdened communities in the vicinity of the facility on the Fort Peck Indian Reservation.

B. Enhanced Public Participation

Given the presence of potentially overburdened communities in the vicinity of the facility, we are providing an enhanced public participation process for this permit.

1. Interested parties can subscribe to an EPA listserve that notifies them of public comment opportunities on the Fort Peck Indian Reservation for proposed air pollution control permits via email at http://www.epa.gov/caa-permitting/caa-permit-public-comment-opportunities-region-8.

2. All minor source applications (synthetic minor, modification to an existing facility, new true minor or general permit) are submitted to both the Tribes and the EPA per the application instructions (see http://www.epa.gov/caa-permitting/tribal-nsr-permitting-region-8).

3. The Tribes have 10 business days to respond to the EPA with questions and comments on the application.

4. In the event an AQIA is triggered, we email a copy of that document to the Tribes within 5 business days from the date we receive it.

5. We notify the Tribes of the public comment period for the proposed permit and provide copies of the notice of public comment opportunity to post in various locations of their choosing on the Reservation. We also notify the Tribes of the issuance of the final permit.

VII. Authority

Requirements under 40 CFR 49.151 to obtain a MNSR permit apply to new and modified minor stationary sources, and minor modifications at existing major stationary sources ("major" as defined in 40 CFR 52.21). In addition, the MNSR program provides a mechanism for an otherwise major stationary source to voluntarily accept restrictions on its potential to emit to become a synthetic minor source. The EPA is charged with direct implementation of these provisions where there is no approved Tribal implementation plan for implementation of the MNSR regulations. Pursuant to Section 301(d)(4) of the CAA (42 USC 7601(d)), the EPA is authorized to implement the MNSR regulations at 40 CFR 49.151 in Indian country. The CHS Farmers Elevator is proposed to be located within the exterior boundaries of the Fort Peck Indian Reservation in the eastern part of the State of Montana. The exact location is latitude 48.10972N and longitude 105.51833W, in Roosevelt County, Montana.

VIII. Public Notice & Comment, Hearing, and Appeals

A. Public Notice

In accordance with 40 CFR 49.157, we must provide public notice and a 30-day public comment period to ensure that the affected community and the general public have reasonable access to the application and proposed permit information. The application, the proposed permit, this technical support document, and all supporting materials for the proposed permit are available at:

Assiniboine and Sioux Tribes
Environmental Programs Office
P.O. Box 1027
Poplar, Montana 59255-1027
Contact: Deb Madison at (406) 768-2300 or 2horses@nemont.net

and

US EPA Region 8
Air Program Office
1595 Wynkoop Street (8P-AR)
Denver, Colorado 80202-1129
Contact: Stuart Siffring at (303) 312-6478 or siffring.stuart@epa.gov

All documents are available for review at our office Monday through Friday from 8:00 a.m. to 4:00 p.m. (excluding Federal holidays). Additionally, the proposed permit, technical support document, and other supporting documents can be reviewed on our website at http://www.epa.gov/caa-permitting/caa-permit-public-comment-opportunities-region-8.

Any person may submit written comments on the proposed permit and may request a public hearing during the public comment period. These comments must raise any reasonably ascertainable issue with supporting arguments by the close of the public comment period (including any public hearing). Comments may be sent to us at the address above, or sent via an email to r8airpermitting@epa.gov, with the topic "Comments on MNSR Permit for CHS Farmers Elevator."

B. Public Hearing

A request for a public hearing must be in writing and must state the nature of the issues proposed to be raised at the hearing. We will hold a hearing whenever there is, on the basis of requests, a significant degree of public interest in a proposed permit. We may also hold a public hearing at our discretion, whenever, for instance, such a hearing might clarify one or more issues involved in the permit decision.

C. Final MNSR Permit Action

In accordance with 40 CFR 49.159, a final permit becomes effective 30 days after permit issuance, unless: (1) a later effective date is specified in the permit; or (2) appeal of the final permit is made as detailed in the next section; or (3) we may make the permit effective immediately upon issuance if no comments resulted in a change in the proposed permit or a denial of the permit. We will send notice of the final permit action to any individual who commented on the proposed permit during the public comment period. In addition, we will add the source to a list of final NSR permit actions which is posted on our website at http://www.epa.gov/caa-permitting/caa-permits-issued-epa-region-8. Anyone may request a copy of the final MNSR permit at any time by contacting the Region 8 Tribal Air Permit Program at (800) 227-8917 or sending an email to r8airpermitting@epa.gov.

D. Appeals to the Environmental Appeals Board (EAB)

In accordance with 40 CFR 49.159, within 30 days after a final permit decision has been issued, any person who filed comments on the proposed permit or participated in the public hearing may petition the Board to review any condition of the permit decision. The 30-day period within which a person may request review under this section begins when the Region has fulfilled the notice requirements for the final permit decision. Motions to reconsider a final order by the EAB must be filed within 10 days after service of the final order. A petition to the EAB is, under section 307(b) of the CAA, a prerequisite to seeking judicial review of the final agency action. For purposes of judicial review, final agency action occurs when we deny or issue a final permit and agency review procedures are exhausted.